

CLAIMS

1. A drug delivery system for localized delivery of Phenstatin to a tumor *in vivo*
5 comprising the polymer poly(N-isopropylacrylamide) chemically bound to Phenstatin.
2. The drug delivery system of Claim 1 having the formula poly(N-isopropylacrylamide-co-phenstatin).
- 10 3. The drug delivery system of Claim 1 having a lower critical solution temperature above 25°C and below body temperature.
4. The drug delivery system of Claim 1 containing about 5 mol% Phenastin acrylate.
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5. The drug delivery system of Claim 1 comprising in addition AAc co-polymerized with poly(N-isopropylacrylamide).
6. The drug delivery system of Claim 5 containing about 5 mol% to 10 mol%
20 Phenstin acrylate.
7. The drug delivery system of Claim 1 wherein Phenstatin acrylate is bound to poly(N-isopropylacrylamide) through an ester bond.
8. The drug delivery system of Claim 7 wherein Phenstatin acrylate is bound to
25 poly(N-isopropylacrylamide)through a carbonate bond.
9. A method of preparing the compound of Claim 1 comprising the steps of
 - i. preparing Phenstatin acrylate; and
 - ii. polymerizing said Phenstatin acrylate and poly(N-isopropylacrylamide).
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10. The method of Claim 9 wherein said polymerizing step comprises co-polymerization with acrylic acid.

11. The method of Claim 9 wherein Phenstatin acrylate is prepared by reaction
5 of Phenstatin with acryloyl chloride.

12. The method of Claim 9 wherein Phenstatin acrylate is prepared by reaction of Phenstatin with isopropenyl chloroformate.

10 13. A method of treating a cancerous tumor wherein the drug delivery system of Claim 1 is locally injected into tumor-containing tissue.

14. The method of Claim 13 wherein said tumor tissue is a breast, prostate, lung or bowel tissue.